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Cover stories

4 — 13 Information Technology: Driving AFMC's effectiveness, speed and efficiency

he Air Force Materiel Command Information Technology directorate is transforming to improve customer support. This issue of the Leading Edge highlights how AFMC is participating in the Air Force Portal pilot program, saving time and money on acquisition, supporting employee processes, training and improving safety through information technology. Turn the page to read how information technology is as central to our mission as the planes and people that support our warfighters every day.

Mission Progress

Cover design by Ms. Libby VanHook, Executive Editor. Cover

illustration by Air Force Media

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Corrections: In the January 2003 issue on Page 17, the side bar was contributed by Maj. Gen. Paul Nielsen. In the February 2003 issue on Page 3, the Global Hawk brief was contributed by ASC Public Affairs.



It's back to basic:

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together to build a

AFRL exploring flexible duty locations for leaders

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Certain Air Force Research Laboratory senior civilian leaders now have flexibility in where they live and work thanks to a new alternative duty location policy recently approved for five directorates.

Under the new policy, civilian senior leaders of directorates that operate out of multiple locations will get to choose where they live.

These leaders include the director, deputy director, associate director and chief scientist civilian positions. The individual must reside where at least 10 percent of that particular directorate's staff is

This test policy specifies that the directorate's headquarters would remain at its current location where the majority of the staff is located.

In two years, AFRL and Air Force Materiel Command will evaluate this test program for directorate management effectiveness and determine whether to continue the program as a test, discontinue it or make it a firm policy for the lab.

This test program does not extend to military members in comparable positions. They will continue to be assigned at the directorate's headquarters location.

—Reported by AFRL Public Affairs

ESC awards contract to upgrade NATO AWACS

HANSCOM AIR FORCE BASE, Mass. — Electronic Systems Center Airborne Warning and Control System NATO program officials recently awarded a major modification to the mid-term modernization contract with Boeing to upgrade the 17-aircraft, NATO AWACS fleet.

The modification adds nearly \$800 million to the contract, bringing its total value to \$1.32 billion.

Mid-term enhancements include a new user interface, multi-sensor integration, a digital communications system, five additional consoles in the aircraft and improved transponder and interrogator capability.

The first NATO AWACS should be



The Airborne Laser makes its final approach at Edwards AFB, Calif., after modification work at Boeing. The arrival allows the ABL Integrated Test Force at Edwards to begin installing the laser and optical components that will make it the world's first laser-armed combat aircraft. (Air Force Photo by Ms. Kristie Hogbin)

Airborne Laser lands at Edwards for testing

EDWARDS AIR FORCE BASE, Calif. — A first-of-its-kind aircraft joined the cadre of weapon systems undergoing flight testing and evaluation at the Air Force Flight Test Center when the YAL-1A, or Airborne Laser, touched down here recently. The aircraft arrived from the Boeing Maintenance and Modification Center in Wichita, Kan.

The YAL-1A is an airborne directed energy weapon system. It relies on its highly modified, 747-400 airframe equipped with sensors, lasers and sophisticated optics to find, track and destroy ballistic missiles in their boost, or launch phase.

With its arrival at Edwards, experts from the Airborne Laser Integrated Test Force can soon begin installing lasers and optical system onto the test aircraft.

Today, the aircraft, lasers, optics and computers that make up the brains of

the system are being integrated and tested individually, according to program officials.

The test force has already conducted initial airworthiness and sensor flight tests. The test team is now integrating the megawatt-class chemical laser system on an existing test fuselage housed inside the ABL Systems Integration Laboratory prior to its installation on the YAL-1A.

The 7,000-square-foot laboratory was designed and built specifically for the ABL integration effort.

Program officials said the ABL program's ultimate goal is to shoot down a ballistic missile by the end of 2004.

Plans also call for a series of tests against other targets on the ground and in the air prior to the missile shoot

— Reported by AFFTC Public Affairs

through initial operational testing by August 2003. After the first aircraft is successfully tested, officials expect authorization to upgrade the remainder of the fleet in January 2004.

The new situation display consoles, along with a major upgrade to the mission-computing environment will

enhance the operators' ability to perform their mission, according to program offi-

These upgrades will also feature a more friendly graphical user interface environment.

-Reported by ESC Public Affairs



Air Force Portal

AF, AFMC team to boost portal effectiveness

Gen. Lester Lyles AFMC Commander

recently told you my commander's intent for transformation within Air Force Materiel Command, listing four expectations to improve our support to the warfighter.

Among those are our goals to become more effective and efficient and to make our command easier to do business with.

The experts in our Information Technology Directorate and the Materiel Systems Group have teamed efforts to do just that by integrating us into the Air Force Portal.

Joining forces

Last year we embarked on an AFMC Portal initiative designed to streamline business processes and achieve significant savings by consolidating or eliminating Web servers. We have since joined forces with the Air Force chief information officer at the Pentagon to integrate what we have accomplished to date with the Air Force Portal. It's a win for AFMC and a win for our Air Force!

Our three original portal objectives remain intact: 1) to establish standard Web views with consistent look and feel and distinctive AFMC branding, 2) to implement a powerful content management capability, ensuring our Web content remains current and relevant, and 3) to provide a common platform for delivering future Web applications and capabilities.

Three phases

We will achieve these objectives in three phases.

During phase one, AFMC headquarters and other selected units here will partici-

pate in the Air Force Portal pilot program along with Air Combat Command head-quarters and selected units at Langley Air Force Base, Va. Participating units other than AFMC headquarters will include the Aeronautical Systems Center, Air Force Research Laboratory and the Air Force Security Assistance Center.

The purpose of the pilot program is to register a large number of users and start getting feedback on Air Force Portal capabilities while assessing the impacts of servicing a large user community.

The current version of the Air Force Portal will provide a single window for you to access a wide range of information across different Web sites.

This information includes: military and civilian pay and benefits information, space-available travel sites and reservation information, TRICARE sites and

other medical and health information, and access to self-service applications like LeaveWeb, Thrift Savings Account Access, myPay and more.

The portal pulls together information for Air Force people into a single site. Target date for achieving phase one was Feb. 3.

Standing up production

During phase two, we position ourselves to achieve real business value from the portal by capitalizing on work already accomplished within AFMC. We will stand up a production content management system here and help do the same at Maxwell Air Force Base, Gunter Annex, Ala.

In parallel, we will help the Air Force chief information officer implement the AFMC workspace model. This model will consist of four Web views: job, workspace, knowledge and reference.

The workspace views will eventually provide AFMC people with personalized content and applications directly related to managing their Air Force careers and accomplishing their day-to-day work.

The goal for achieving phase two is March 25, but we're working hard to do it sooner. When that is complete, we will begin moving existing Web content to the portal, and we will create links to the various applications our users need to do their jobs.

The final step

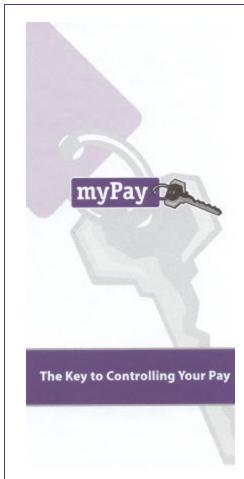
Finally, during phase three, we'll continue migrating Web content and start fully integrating Web capabilities into the common platform and workspace model built during phase two. This final phase is a long-term effort and may actually include a number of individual steps.

I am committed to the Air Force Portal because it drives business value through Web server elimination. It also sets the stage for transforming AFMC business processes.

Unlike Web sites, where some information may be irrelevant, the Air Force Portal will offer registered users each a site that knows them. The Portal offers self-service, allowing our people to take care of business without waiting in lines, on the phone or struggling with red tape. It makes getting services and finding information online easier, and offers meaningful, relevant content.

Cutting through the clutter

The Air Force Portal cuts through the clutter of online information, offering consistent, user-friendly navigation through a wealth of knowledge. This will help us do our jobs better and improve our quality of life. I need everyone across AFMC to get behind this important command and Air Force initiative. The Air Force Portal is personal, powerful and essential!



myPay — Putting you in control

eave and earning statements, tax statements ✓ and travel vouchers are just some of the items available online through the new myPay system. Formally the Employee and Member Self-Service program, myPay allows activeduty, Guard and Reserve airmen, Defense Department civilians, retirees and beneficiaries to access and process certain pay items, according to Defense Finance and Accounting Service officials. The myPay system is set up to save users time by allowing them to make changes and view finance related items online and is available nearly 24 hours, seven days a week.

"This exciting initiative increases productivity of our Air Force personnel by keeping them on the job," said Brig. Gen. Frank Faykes, director of financial management and comptroller, Air Force Materiel Command. "It allows us to meet their finance needs at their time of choice, 24 hours a day."

Multiple uses

Other features available on myPay include changing direct deposit information, correspondence addresses and allotments. Military members may also make some Thrift Savings Plan transactions.

Users can view and print their last three leave and earning statements and elect to stop receiving hard copies. Hard copy delivery will continue unless stopped through myPay.

The myPay system uses a combination of measures which make it nearly as secure as an automated teller machine, according to DFAS officials.

Easy to use

To use myPay, personnel need their social security number and myPay personal identification number. PINs from the old E/MSS system are valid in myPay. If a user has forgotten their PIN they can reactivate it online. Those who don't have an E/MSS or myPay PIN may apply online.

Access to myPay is available at https://mypay.dfas.mil and at http://www.dfas.mil.

"MyPay brings finance customer service into the 21st century. We are quickly getting to the point where finance customers will be served in their own offices through the use of online services," Gen. Faykes said.

— Ms. Crystal Lavadour, ASC Public Affairs

Information transformation

Integration is the key



ir Force Materiel Command's Information Technology Directorate, Wright-Patterson Air Force Base, Ohio, stood up in 2002 to bring the command integrated solutions to its communications needs.

According to Col. Paul Law, AFMC Information Technology Directorate deputy director, horizontal integration, or systems talking to systems, is the key. Information technology needs to be viewed as a weapons system in order to make our business applications more fail-safe.

Integrating applications

"Just as we look for integrated communications solutions for weapons platforms such as the Predator and F/A-22, we will be able to look to information architecture to integrate customer communications needs for hardware and software applications." said Col. Law.

"We want our customers to come to the directorate first with their information needs." he said.

Col. Law said information technology can look in the inventory to determine if the need can be met by something the command already has.

"The whole idea behind the Air Force's information architecture concept is identifying reusable components that can be assembled in different configurations to



Illustration by Mr. Gene Lehman, AFIT

meet customer needs," he said.

"We are trying to help the customer develop stronger information capabilities, while reducing cost and eliminating duplicative efforts," said Col. Law.

Under the new directorate, the responsibilities of the chief information officer will be expanded to take on a more corporate information technology view.

IT is building the infrastructure to work in conjunction with information applications the individual directorates need to do their jobs.

According to Col. Law, the directorate's role is to provide guidance to other directorates to help with new technologies purchases and to help each functional area leverage the technology available today and in the future.

"The goal is to provide improved customer service," said Col. Law. "We want to inform customers and provide common processes which will work with the existing information technology infrastructure, such as portfolio management and information technology financial strategy, and to help guide the directorates toward solutions that will work with the information technology architecture."

Transforming the directorate

"By using the experts within IT, customers are guaranteed product satisfaction, plus reduced incidences of wasted money, time and training on non-integrated solutions," said Col. Law. the directorate is transforming the way it performs

customer service and will maintain a support role for the entire command's information needs.

Information Technology plans to integrate networks across the command by providing a common platform that each location will use, such as developing a regional e-mail server.

A central model

Information Technology will maintain servers in four regions to provide e-mail service across the command. Each region will backup the others virtually eliminating e-mail outages. The plan is to eventually have one central server and one backup for the entire command.

"By bringing information technology services to a central model we can do better because we can afford better," said Col. Law. "In order to realize this goal, we need the support of the command to provide input on current and future information technology needs."

According to Ms. Tammie DiTommaso of the IT Transformation Division, the directorate is meeting with members of the various functional areas of the command to identify these processes to determine how to design and deploy an integrated solution that each directorate, and eventually, every center can use.

"We are not doing this in isolation, we rely on the input of each directorate and center to achieve a common information goal." she said.

From CyberSpace to MarketSpace, ASC gets job done on the Internet

hanks to "MarketSpace," a new Web-based device developed by program teams at the Aeronautical Systems
Center, Wright-Patterson Air Force Base, Ohio, acquisition experts are saving time and money, and increasing their awareness of different products.

"Program teams benefit from the electronic event registration and the automated collection of vendor information into a vendor base," said Mr. Kerry Estes, facilities and tools management integrated product team lead at the Acquisition Center for Excellence, the group who developed MarketSpace.

Everybody benefits

"The major significance of MarketSpace to the acquisition community and Air Force are cost avoidance and increased market awareness," he said.

MarketSpace, which came online in 2002, is available to ASC program teams, vendors and potential vendors.

Vendors benefit by using MarketSpace to post relevant and up-to-date information about their products, capabilities and interests.

They can also browse information about active programs in the MarketSpace and link between MarketSpace and related business opportunities, according to Mr. Estes. "Both benefit from the continuous communication between government and industry offered by MarketSpace," he said.

It automates the research process, reducing manpower by about five to one, according to Mr. Estes. What used to take 200 hours can now be accomplished in about 40 hours, he said.

Time saver

Prior to MarketSpace, "boxes, volumes of information in print, digital media, and so on had to be collected and processed manually, a very time consuming process," said Mr. Estes.

"Likewise, industry registration was a time-consuming and unwieldy manual process involving telephone conversations, emails and paper," he said.

This is the first time the tool is being used at ASC and other locations. MarketSpace is available to all ASC offices and has potential application for other offices requiring electronic registration and data storage.

"The MarketSpace tool is a great example of rapid deployment based on spiral development. Open communication between the program offices and the Acquisition Center of Excellence facilitates clear lists of requirements as well as a workable schedule."

— Capt. Dani Burrows, ASC Public Affairs

Aeronautical Systems Center, Wright-Patterson AFB, Ohio, is cutting costs and saving time on its many programs, such as the Predator, by developing Web-based products to aid the acquisition process. (Photo courtesy of General Atomics Aeronautical Systems)



Let your fingers do the walking

AFWay is way to go

Ms. Belinda Bazinet Standard Systems Group

Reports at Standard Systems Group, Maxwell Air Force Base, Gunter Annex, Ala., continue to re-engineer the Air Force's newest information technology purchasing Web site, aiming at increasing service-wide usage and improving procurement and purchasing processes.

AFWay, an online ordering system originally fielded in March 2002, places information technology products and more than 30 vendors at the fingertips of every Air Force member with information technology needs, according to Ms. Sally Wagner, AFWay program manager. The program supports purchasing and tracking

information technology products via an interface to the information processing management system.

It's getting better

"Many recommendations users provided after the initial fielding of AFWay have been implemented, and enhancements continue to be made to the site," Ms. Wagner said.

She said one major enhancement was recently implemented based on a competition and source requirements policy clarification from the Air Force contracting office. Previously, users were required to provide three sources, or price quotes, to make a purchase.

Now there's no requirement to have more than one source listed since AFWay

products have already been competitively selected, she said.

The AFWay system, originally developed from Air Combat Command's pilot program ACCWAY, combines the business processes from that program with the purchasing capabilities of Standard Systems Group's Commercial Information Technology Product Area Directorate, Ms. Wagner said.

While using AFWay is currently voluntary, Air Force members are strongly encouraged to register and become familiar with the process as the program will become mandatory, she said. As more technology purchases are made using AFWay, the Air Force expects to see reduced overhead and a reduction in the total Air Force information technology ownership costs.

AFWay will assist in making the Air Force information technology enterprise more easily sustainable and reliable through enforcing standard information technology solutions.

Putting customers first

Mr. Frank Weber, SSG executive director, views the AFWay program as yet another way to meet the needs of the customer.

"SSG is committed to not only saving Air Force dollars, but equipping the operational Air Force with technology solutions that will enable them to focus on the mission," he said.

SSG, an element of the Electronic Systems Center at Hanscom AFB, Mass., provides seamless management of standard computer systems for the Air Force combat support domain, from inception through worldwide employment and replacement. It manages software development programs, to include use of the latest design and reuse tools and software engineering processes.

Tech. Sgt. Robert Van Hook, a radar maintenance technician at Nellis AFB, Nev., demonstrates the use of handheld electronics while in chemical mask and gloves. Devices, such as laptop and handheld computers, personal digital devices and tablet PCs, can be purchased through AFWay. (Photo by Staff Sgt. Chris Flahive)

Virtual outprocessing a reality

riving around to get signatures on a checklist will soon be a thing of the past for Air Force Materiel Command members as they're the first to try the Air Force's virtual out-processing initiative.

The new feature of the Air Force's Web-based virtual military personnel flight promises, with the click of a mouse, faster, easier out-processing for military members being moved to a different unit or base, separating or retiring.

The initiative has been successfully tested at Wright-Patterson Air Force Base, Ohio; Nellis AFB, Nev.; Kadena Air Base, Japan; and Spangdahlem AB, Germany, said Master Sgt. Rob White, AFMC personnel directorate, who said experts at AFMC bases are trained on the "howto's" and all systems should be up and operational by the end of the year.

Phased-in approach

"We're using a voluntary phased-in approach to allow our bases maximum flexibility in taking care of our customers," Sgt. White said. "Our personnel offices are currently very challenged with deployments and other taskings. Once implemented, we're confident virtual outprocessing will be a tremendous benefit to our customers," he said.

The new feature will be available to the

entire Air Force by summer 2003 to include civilian employees, according to Maj. Alessandra Stokstad, Air Force Personnel Center, Contact Center chief, Randolph AFB, Texas.

Stop the run-around

"Virtual out-processing should keep people from having to visit their personnel office and then run around to several organizations on base to be cleared to leave — something most people dread anyway," Maj. Stokstad said.

When an airman gets a permanent change of station assignment or elects to retire or separate, the local personnel office will load the member's Social Security number into the out-processing feature of the virtual MPF system and a tailored out-processing checklist will be created online, said Maj. Stokstad.

People in all necessary base organizations, after being prompted by an automatic e-mail, will be able to access the virtual out-processing checklists.

"Those agencies which don't require a member to physically be present, will be able to clear a person to leave right there online," she said.

"The result is less time spent going to places where you don't need to be and more time for family or more pressing issues," said Maj. Stokstad.

Take the base library for instance, Sgt. White said. "The checklist becomes a computer database on a Web site which each agency can monitor online."

"The military personnel flight outbound assignments section staff loads the names of departing members into the database," he said.

"The librarian checks the computer and the member no longer needs to visit the library if all books are returned and fees are paid, saving time and transportation costs," said Sgt. White.

"The librarian can simply annotate that in the pull-down menu and the clearing action is complete for that organization," Maj. Stokstad said.

The personnel office and the departing member, who have access to the list, can track which organizations have signed them off and which are still pending.

In addition, direct interaction by the personnel office with the out-processing organizations can further speed things along.

"A member should be able to fax or email their orders to those organizations requiring a copy before signing out the individual," said Maj. Stokstad.

Customer convenience

"The biggest advantage to the virtual MPF is its convenience for the customer," said Chief Master Sgt. Deborah Fuqua, AFPC chief of knowledge management.

People can access the vMPF through the AFPC Web site at www.afpc.randolph.af.mil. Click on the "vMPF" logo at the top of the page.

Virtual MPF users will need to establish an account before using the service. Establishing an account takes only a few minutes.

For more information about the virtual MPF, go online or call the AFPC Contact Center at (866) 229-7074.

— Tech. Sgt. Carl Norman, AFMC Public Affairs

2nd Lt. James Yeates of AFMC's Information Technology Directorate checks out the Materiel Systems Group Learning Resource Center, with the help of Ms. Nancy Caldwell, librarian, Libraries are one of the many stops members now make before completing outprocessing. (Courtesy photo)



DMRT upgrade shoots for efficiency

Depot Maintenance Reengineering and Transformation is in line for an exciting period of information technology improvements, according to Mr. Steve Hannaford, Air Force Materiel Command Logistics Directorate, Integration Division chief.

Improving the information systems supporting depot maintenance and supply are aimed at users, making the system easier and more efficient to use by connecting and combining those systems to save money and time.

The DMRT efforts for improving information technology in these areas have direct implications for the customers in the warfighting commands, according to Mr. Hannaford. These include: efficiently and effectively capturing, aggregating and transferring data to and from information systems; increasing data integrity and accuracy by eliminating manual data entry errors; promoting streamlining of data entry processes; increasing data input flow rates; facilitating real-time update of data; and reducing the time and cost of data entry for logistics processes.

"Leveraging information technology provides a competitive and performance business advantage," said Mr. Hannaford, who is leading these efforts. "We have formed a team with our counterparts at the logistics centers to identify targets of opportunity, and ultimately, we plan for fewer, less-costly systems that give fast, easy access and use."

The team he referred to is focused on integrating, managing and optimizing information technology across depot maintenance and supply management in three main areas: information technology master plan, automatic identification technology and Depot-X.

Information technology master plan

Just as a map is useful for a trip, a map for this information tech-



nology journey, called the AFMC Logistics Information Technology Master Plan, is similarly important. The plan identifies the paths depot maintenance and supply management should take toward a single operational and supporting systems destination.

The team uses this plan to focus on the future vision for AFMC depot maintenance and supply management, so they can properly steer efforts toward the right information technology solutions.

An example of this approach is the command's maintenance, repair and overhaul initiative, which is slated to replace nine systems costing more than \$12 million annually to maintain.

Automatic identification technology

In addition, the team wants to decrease data entry demands on end-users and make systems easier to use. One related activity is a capability to evaluate, demonstrate and implement emerging AIT devices for the depot maintenance environment. Examples that enable automated data entry and transfer among depot maintenance business systems include: barcoding; biometrics; radio frequency tags; automated tool dispensers; and Smart Cards.

For example, a worker could simply swipe their Smart Card to login to multiple systems and would not need to re-enter login information to switch systems. These methods would greatly simplify and reduce the time spent capturing data and keep workers focused on their primary function.

Depot-X concept

The team involves end-users through the system's lifecycle assuring capabilities are being developed to meet ther requirements. This includes a rapid assessment, development, integration and fielding capability for enhanced processes, systems and information technology, called Depot-X.

The Depot-X concept is being modeled after the combined air and space operations center and provides for a structured evaluation and analysis process, evaluating information from a functional and technical perspective. Depot-X uses an approach that specifically supports improved coordination and collaboration between user, developer and test communities across the depot maintenance and supply management functional areas.

"It is through this collaboration that we can ensure the fielded information technology capabilities will meet end-user needs and requirements," said Ms. Debra Walker, deputy director for depot maintenance. "Depot-X will support the effective transition of information technology innovations across the centers, thus minimizing redundant system development efforts."

- Ms. Karen Emery, AFMC Logistics Directorate

Current depot maintenance reengineering and transformation improvements in information technology have direct implications for the customers in the warfighting commands. Here a staff sergeant at Robins AFB, Ga., uses a maintenance aid to troubleshoot an F-15 equipment bay.



The Air Force Research Laboratory uses sleds, such as the one shown here that tested the ejection seat for the F/A-22 at Holloman AFB, N.M., to test human acceleration and ejection response. (Photo courtesy of 846th Test Squadron, Holloman AFB, N.M.)

AFRL's online Biodynamics Data Bank helps prevent pilot injury

Mr. John Buhrman AFRL Biomedical Engineer

hen Air Force researchers need quick answers to human safety issues, they turn to the Air Force Research Laboratory's Biodynamics Data Bank, which was recently made available on the Internet.

The data bank, which contains the world's largest repository of human acceleration response and ejection test data, was developed at AFRL by a team of engineers and scientists. It has evolved from a mainframe system into a Windows-based system with a Web browser and full search capabilities.

Data overload

The data bank contents include data from more than 8,000 acceleration tests conducted with more than 350 human volunteers and dozens of instrumented test dummies during the past 30 years at AFRL. The volunteers include both Air Force enlisted personnel and officers. The tests were conducted on laboratory test tracks and deceleration towers that simulate the high-G accelerations and forces experienced during actual aircraft ejection and crashes.

As an example of how much data the bank contains, for every one of the volunteer test subjects, it knows how each one would respond during an ejection. Researchers measure which direction a volunteer's head moves, how much stress is on the neck, and even estimate how much each part of the body weighs to see how it would affect the trajectory of the ejection seat. In many cases, it even knows the size and density of a volunteer's vertebrae.

Pilot safety

The data bank is instrumental in providing researchers with test data for use in the areas of aircraft ejection safety and automotive crash protection. Researchers use the data to predict potential effects on the pilot's safety of new equipment such as night vision systems, seat cushions and restraint systems.

Researchers want to know whether any of these items could potentially lead to a neck or back injury during a high-speed ejection. An ejection is a traumatic event and the pilot could have something that feels nice and soft like a seat cushion that could actually lead to a serious back injury if improperly designed.

The data bank also provides researchers with the tools to help determine the ejection injury risk to the expanded pilot population. The Air Force now accepts pilot candidates weighing as little as 103 pounds or as much as 248 pounds. Since the data bank contains many tests conducted with small females and large males, AFRL researchers have

used this information to establish injury criteria for these individuals.

Researchers want to be able to predict what would happen to these individuals even though very few have ejected to date. The diversity of the data bank subject pool provides researchers with the data needed to make these predictions.

Now that the data bank is online, it is becoming widely used by other research institutions throughout the world, including Defense Department research laboratories, defense contractors, automotive manufacturers, universities and friendly foreign defense agencies.

One of a kind

No other databases exist where a person can call up the data from thousands of simulated ejection tests conducted with human subjects. AFRL even has engineers from General Motors and Daimler-Chrysler that use the data for automotive applications, since all of their tests are with crash dummies.

It's really satisfying to know that AFRL test data is being used throughout the world to save lives and prevent injuries

A registration form is available online where users can register for the data bank free of charge at http://www.biodyn.wpafb.af.mil.

New directorate keeps center computer savvy

Ms. Jeanne Grimes OC-ALC Public Affairs

In a technology-driven environment like Tinker Air Force Base, Okla., the newest directorate is a little like David squaring off against Goliath.

Only the information technology directorate hasn't come to do battle, but to render aid. In the process, they hope to ensure the thousands of employees who fix airplanes, engines, cruise missiles and such have the right computer technology to do their jobs.

Staying focused

"Our main focus, as we start off as the information technology directorate, is going to be on the Oklahoma City Air Logistics Center," said Col. Steven Herring, director. "Until now, it's like every organization has had its own set of people who buy their personal computers and let a contract maintain those computers and do software development. My task is to bring that all together under one umbrella."

That mission is as vast and complex as the ALC itself, Col. Herring explained, since no one knows exactly how many computers and peripherals like software, scanners and printers are used in the cen-

Ms. Kelley Butler, IT's chief technical officer, has only a rough estimate on the number of personal computers to be found in the ALC — a figure between 8,000 and 10,000.

"We have a lot of places, like out in the shops, where multiple people share one PC." Ms. Butler said.

"But then you'll have other cases where people actually have multiple PCs. If we buy new PCs, we don't ever seem to get rid of the old PCs because people find they need them for a conference room or they need an extra PC at their desk," she said.

That's why the directorate's first order of business is to complete a center-wide inventory of all the things being done at Tinker in the name of information technology.

Counting computers

"We're still in the real baby steps of trying to inventory all that," Col. Herring continued. "After we get our arms around it, we're going to each individual directorate at the air logistics center and seeing where it would be smart to consolidate support.

"Our goal is a single buy for personal computers or a single maintenance contract, or a single source to go to so we have standardized computers and standardized software so we don't duplicate things," he said.

Support is strong from IT's two biggest customers — the maintenance and logistics management directorates — where Col. Herring's staff is already working to standardize computer support.

Information technology, a provisional directorate since Nov. 1, 2002, stood up months ahead of Air Force Materiel Command's April 2003 deadline to establish like directorates at every air logistics center.

According to Col. Herring staffing in the IT directorate will grow to about 125 employees in 2003 and he expects to add even more after that.

Starting small

"We're starting relatively small sizewise," he said. "We don't have the assets to do everything we'd like to do right now. We want to do it right, and we want to do it smart, but we're not rushing to get



to the end of the line here.

"We're going to map out a very careful plan to take on what we can and do it well. And as we prove our value, we'll take on a little more and do that well. That's my approach," said Col. Herring. "We're aware of Air Force-wide funding constraints, and that the transfer of responsibility of information technology to the new directorate will come with no additional dollars or resources. This means the transition will come from the reallocation of existing budgets," he said.

Striking a balance

Ms. Butler sees the directorate's role as striking a balance while ensuring information technology continues to move forward

"You can't always jump to the newest thing," she said, "but you have to make sure you keep moving. You have an architecture; you have a vision. Our goal is to help everyone at the center with that vision so we all do it together, and don't have different groups stovepiped."

Col. Herring, who comes from a flying background, hasn't always cared about the details that made the technology work. Nothing, he said, is more frustrating than having a new tool or technology that requires "so much care and feeding" before it can be used.

That's one technology trap he's determined the new directorate will avoid.

"There will be those cases where information technology does not make sense now," he explained. "Sometimes the best way to get a job done is just with a pencil and paper.

"We want to be customer-focused, and action-oriented," he said. "There's a tremendous capability out there that we're going to explore and we'll bring it on as we can."



Just passing through

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A Marine MV-22 Osprey stopped here Jan. 17 for fuel on its way from Amarillo, Texas, to Patuxent Naval Air Station, Md. It is the second low-rate initial-production Osprey airframe.

Air Force pilots Lt. Col. Tom Currie and Maj. Tom Goodrough, from Edwards Air Force Base, Calif., flew the aircraft.

—Reported by ASC Public Affairs (Photo by 1st Lt. Tana Hamilton, ASC Public Affairs)

AFIT partners with Navy for acquisition education

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Air Force officials announced recently that graduate acquisition and meteorology training at the Air Force Institute of Technology will be transferred to the Naval Postgraduate School located in Monterey, Calif.

This transfer will not affect the professional acquisition and meteorology continuing education program provided by AFIT. The institute will continue to be a critical education resource for acquisition and sustainment professionals, according to Mr. Bill Hancock, AFIT public affairs officer.

Members will have online access to courses at the school of systems and logistics and at field locations. The institute will serve nearly 11,000 students in fiscal year 2003.

— Reported by AFIT Public Affairs

AFRL awards contracts for anti-terrorism research

ROME, N.Y. — Technology to help intelligence analysts and to anticipate and preempt terrorist threats is the focus of six contracts Air Force Research Laboratory Information Directorate officials recently awarded. The agreements will provide improvements in the ability to detect asymmetric threats to national security.

The contracts are aimed at detecting,

classifying, linking, tracking and understanding information gathered from traditional and non-traditional information sources.

The focus is on bringing prototype tools and capabilities to Defense Department intelligence agencies so analysts will be better able to identify potential threats to military forces and to the nation. The technology supports the Genoa II program, making teams faster, smarter and more joint in their day-to-day operations.

Genoa II research will develop technology that supports collaborative work by cross-organizational teams of intelligence and policy analysts, and operators, as they develop models and simulations to aid in understanding the terrorist threat.

— Reported by AFRL Public Affairs

New law provides patients more secure privacy rights

EGLIN AIR FORCE BASE, Fla. — In support of the new Healthcare Information Portability and Accountability Act, all people eligible for care in military hospitals are scheduled to receive a Notice of Privacy Practices brochure in the mail by March 2003.

The act affects not only military hospitals, but all healthcare providers and institutions nationwide. The act includes provisions for health insurance portability, fraud and abuse control, tax-related provisions, group health plan requirements, revenue offset provisions and administra-

tive simplification requirements.

Patients will be asked to sign a statement that they received the privacy notice and understand their rights and a copy will be placed permanently in the patient's records. Besides names, the act is meant to protect Social Security numbers, phone numbers, addresses and any other piece of information that could be used to identify a patient.

The 1996 act was given final rule in April 2001, and health care providers and organizations were given a two-year period in which to comply.

—Reported by AAC Public Affairs

Celebration of aviation art at U.S. Air Force Museum

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Sixty paintings by renowned aviation artist Mr. Keith Ferris are on display at the U.S. Air Force Museum.

The exhibit, "A Century of Flight," is a celebration of airpower and is on display under special lighting near the entrance of the museum's early years gallery through March

This is the first of five exhibits planned as part of a yearlong event at the museum, "A Centennial Celebration of Aviation Art," which will feature more than 250 original paintings by acclaimed aviation artists.

— Reported by U.S. Air Force Museum Public Affairs



B-2 returns to skies after modification work

The B-2 Spirit of New York is back in the sky above Edwards Air Force Base, Calif., after spending most of last year undergoing modification work designed to bring the bomber up to speed with its operational counterparts.

he only B-2 at Edwards, the Spirit of New York, was the third bomber built of the Air Force's fleet of 21. The aircraft successfully returned to the air in December after the Global Power Bomber Combined Test Force at Edwards completed modification work, which began in January 2002.

The test force includes military test experts from the 419th Flight Test Squadron as well as those from government contractor Northrop Grumman.

Refurbishing and upgrading

According to Mr. Guy Mills, B-2 project manager at Edwards, the work focused on refurbishing and upgrading the aircraft's fuel cells.

The fuel cells of the Edwards' B-2 were never built to fleet standards. The downtime was an opportunity to modify the aircraft's fuel tanks from their preproduction state to full production configuration.

Bringing the B-2 test aircraft in line with the Air Force's operational fleet at Whiteman AFB, Mo., is benefiting the nation's warfighting ability, said Mr. Mills. The multi-role bomber's low-observable, or "stealth," characteristics give it the unique ability to penetrate an enemy's most sophisticated defenses and threaten its most valued, and heavily defended, targets.

"If there was a large contingency operation and Air Combat Command needed this B-2, the aircraft would now be in the proper basic configuration, and we could turn it over to them sooner for warfighting purposes," said Mr. Mills.

Supporting the upgrade

To support the extensive upgrade, the B-2 hangar was turned into a fuel cell environment, which required bringing in a fuel vapor extraction system. In addition, fuel cell technicians and structural experts from across the base were brought in to assist the bomber CTF during the yearlong upgrade.

The integrated team disassembled many of the leading edges and surfaces of the aircraft in order to perform the modifications.

"This was a large transformation of both the aircraft and the hangar," said Mr. Mills. "It's amazing that such a big jet can be taken apart, put back together and then fly so well."

Mr. Mills said he expects the upgrade to bring many advantages to the B-2 test program at Edwards. The work cleaned up some pre-production deficiencies and is expected to reduce false alarms in the cockpit associated with the older fuel system.

Additional modifications also reduced the potential for lightning strikes to do

damage to the aircraft, added Mr. Mills.

The small number of B-2 bombers in the Air Force inventory is a constant in the minds of the test team members.

An important mission

"Because there are only 21 B-2s, it is especially important that we take care of them," Mr. Mills said. "That means doing the best job we can with our safety planning whether we are performing modifications or actual flight tests. This aircraft is a national asset and we never forget that."

With the conclusion of the modification work, the aircraft was officially transferred from Northrop Grumman to the Air Force for configuration control Dec. 20. The transfer gives the Air Force full responsibility for aircraft maintenance except for those prototype-upgraded systems still under test.

Flight tests on the B-2 will resume with a tightly compacted test schedule through 2009, said Mr. Mills.

Upcoming projects include satellite communications testing designed to equip the B-2 with enhanced beyond line-of-sight communications capability and the testing of a smart bomb rack assembly, which will allow the Joint Direct Attack Munition-82 to be integrated onto the B-2A.

— Ms. Leigh Anne Bierstine, AFFTC Public Affairs



The first Air Force C-5 Galaxy airlifter improved through an avionics modernization program managed by the Mobility System Program Office at Aeronautical Systems Center at Wright-Patterson AFB, Ohio, takes off from Dobbins ARB, Ga., on its maiden flight. (U.S. Air Force photo)

C-5 cargo giant makes first flight with upgraded avionics

he first C-5 Galaxy cargo aircraft improved under an avionics modernization program based at Wright-Patterson Air Force Base, Ohio, made its maiden flight from Dobbins Air Reserve Base, Ga., ahead of its planned February 2003 date.

The massive transport, with a combined U.S. Air Force and Lockheed Martin crew, took off on the morning of Dec. 21, and returned to the Georgia base after more than five hours, said Lt. Col. Darrel Watsek, C-5 program manager, Air Mobility Systems Program Office.

Making the grade

During the flight, crewmembers demonstrated basic flying qualities and navigational system operations with the new avionics upgrades. "The flight also allowed them to verify new primary flight displays and initially explore stability augmentation operations," said Col. Watsek.

"This flight was a significant milestone for the program, and we are very pleased to have accomplished it ahead of schedule," said Ms. June Shrewsbury, vice president of Lockheed Martin's strategic airlift program. "It demonstrated the basic airworthiness of the new avionics suite, and we were able to collect critical flight data to characterize system performance for additional capabilities that will complete development in 2003."

Safety first

The program is the first phase in the Mobility Systems Program Office's \$13 billion modernization program to continue fleet

operations through 2040. Designed to deliver a safer C-5 fleet to Air Mobility Command, it includes installing two new capabilities: a terrain awareness and warning system; and traffic alert and collision avoidance system.

The latter system warns crews when another aircraft is dangerously close, Col. Watsek said. It's already been credited with helping pilots avert two potential mid-air collisions.

Cost efficient flying

Also in the upgrade package is new communication, navigation and surveillance equipment required under the federal aviation administration's global air traffic management program. Meeting these standards will give the Air Mobility Command workhorse access to more efficient flight routes, saving time and money, said Col. Watsek.

During the second phase of the upgrade, the reliability enhancement and re-engineering program will reduce the need for engine removals, decrease noise and emissions, and increase the fleet's climb and payload capabilities, he said.

"This is a great day — not only for AMC, which will get this modernized airplane, but ultimately for the sons and daughters of America around the world, who are tethered to our 3,000-mile air supply line," said Col. Jim Lynch, development system manager for ASC's C-5 modernization program. "Today marks the first delivery on an Air Force and Lockheed Martin commitment to make sure America's mightiest airlifter is able to fly anywhere in the world."

— 1st Lt. Tracy Bunko, ASC Public Affairs

LEADING FOR MARCH 2003

AFRL co-op program revitalizes workforce

Thile the nation continues its war on terrorism, Air Force Materiel Command is facing its own battle as they try to overcome a looming shortage of scientists and engineers.

However, many officials at Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio, feel the future workforce has arrived in the various co-op programs the laboratory offers.

Realizing dreams

At the sensors directorate, Mr. Ron Frank, a Cedarville University senior, was one of 19 co-op students selected to work in the radio frequency technology division.

"Always wanting to be a fighter pilot, I had hoped to attend the Air Force Academy," he said, "but a health issue barred me from that future. Perhaps there is a chance I can still serve my country with my creativity here in sensors.

"If I can't use the weapons, I want to make these weapons more effective. There is incredible freedom to innovate in this lab." he continued.

Mr. Frank juggled the co-op program with a full class regimen. Up before 5 a.m., he headed to Wright-Patterson for four hours of work, and then attended four classes from noon to 5 p.m.

"It was a grueling quarter," he said, "but the engineers here made my assignments come alive. Giving me real-world applications to the problems in my textbooks was amazing."

Revitalized program

The air vehicles directorate co-op program was revitalized during the last two years and offers students the opportunity to work on some unique projects.

According to Mr. Gary Hellmann, currently mentoring two co-ops, the revitalized program is mutually beneficial. "We are able to bring in some of the brightest young engineering students in the country, who bring with them the latest ideas and technology."



The co-op participants are equally enthusiastic.

Mr. Brian Dicks, an aerospace engineering major at the University of Cincinnati, and Mr. Adam Snyder, computer science major from the University of Toledo agree that the key benefit for the co-op is the opportunity to apply the concept they've learned in the classroom in a hands-on, highly technical environment — while getting paid to do it.

Both students worked on several projects, including developing a recruiting simulator for the 345th Recruiting Squadron out of Scott AFB, Ill., and repairing and revamping the F-16 flight model. Co-ops are able to stay current by working approximately 10 weeks at a time, alternating working one quarter or semester followed by attending school the next.

If the co-ops agree to come back the following quarter, the directorate picks up their tuition tab, providing additional incentive to stay with the program. Candidates for the program must have a 3.0 or higher grade point average, and a major in aerospace engineering, computer engineering and science, mechanical or electrical engineering, are preferred.

Realizing results

And at the propulsion directorate, Mr. Brian Frankey, a University of Dayton graduate and newly minted mechanical engineer, is the first graduating cooperative education student returning to the directorate since the program was restructured two years ago with the goal of being more attractive to students. The Hamilton, Ohio, native's commitment to join the AFRL team is clear evidence the directorate's investments are paying off.

By developing a broad recruitment strategy that offers tuition assistance and creating challenging projects for co-ops to apply their germinating skills, the directorate went from zero co-ops two years ago to nearly 40 today, according to Mr. John Horner, propulsion directorate co-op program manager.

"I would definitely recommend this program to others," Mr. Frankey pointed out.

That type of endorsement is exactly what Mr. Horner was hoping for as the directorate attempts to grow the next generation of experts who will keep the Air Force on the cutting edge of propulsion and power technology advancements throughout the 21st century.

Mr. Horner said he has great confidence in the co-op program because it "gives us the opportunity to evaluate a student's performance in a challenging research environment prior to offering a career appointment. Likewise, it allows the student a chance to experience working in the research field to help them."

— Ms. Grace Janiszewski, Ms. Melissa Kamaka and Mr. Michael Kelly, AFRL, all contributed to this story.

Mr. Brian Frankey, a University of Dayton graduate and newly minted mechanical engineer at AFRL, is the first co-op student to return to the AFRL Propulsion Directorate following his graduation. One of the ways AFRL is hoping to overcome the shortage of scientists and engineers in its directorates' various co-op programs.



Two F-16 Fighting Falcons fly to Edwards AFB, Calif., from the Aerospace Maintenance and Regeneration Center at Davis-Monthan AFB, Ariz. (Photo by Ms. Bobbi Garcia, AFFTC)

Edwards gets F-16s from storage

est operations at Edwards Air Force Base, Calif., is home to two additional F-16 Falcons slated to become an integral part of supporting flight test programs around the base.

The two are the first of nine Falcons making their way to Edwards this year.

Capt. Kevin Roethe of test operations and Maj. Jim Less of the U.S. Air Force Test Pilot School recently flew the aircraft to Edwards from the Aerospace Maintenance and Regeneration Center at Davis-Monthan AFB. Ariz.

A change of plans

The arriving aircraft were originally part of a deal U.S. officials brokered with the Pakistani prime minister to sell 28 F-16s to that government.

That agreement broke down after Pakistan ignored the nuclear non-proliferation policy of the U.S. government and its allies, canceling military foreign sales to that country. That left the aircraft in storage at Davis-Monthan for more than a decade.

After several years of modifications and rebuilding, the aircraft made their way to Edwards. The aircraft are late A and B models, versus the C and D models pilots routinely fly today.

They were built in the late 1980s and early 1990s and are scheduled to replace some of the older F-16s in the Edwards inventory and will provide pilots with better capability and reliability, said Lt. Col. Troy Fontaine, commander of test operations at Edwards.

A varied mission

With only eight and 11 total flying hours, the two aircraft will be used for support operations in test operation's 412th MXG Shadow Fleet. The aircraft will perform photo chases, high-alpha testing and test support missions for Edwards' various test forces. The jets will also be used to train students at the test pilot school.

According to Col. George Ka'iliwai, commandant of the test pilot school, the new aircraft are welcome additions to the school's busy flying schedule.

"These additional F-16s will help the test pilot school graduate our students fully trained and on-time," said Col. Ka'iliwai.

"Increasing the number of F-16s helps us ensure that these aircraft are available when we need them to meet our flying program requirements as well as test program requirements around the base including the F/A-22," Col. Ka'iliwai continued.

Air Force officials will take ownership of 14 aircraft while the Navy will get 14 to be used as aggressor aircraft for training. In addition to the nine aircraft slated to arrive at Edwards, the 40th Flight Test Squadron at Eglin AFB, Fla., will receive four of the regenerated fighters.

— Ms. Leigh Anne Bierstine, AFFTC Public Affairs



Four students from the Air Force School of Aerospace Medicine at Brooks City-Base, Texas, climb the ramp to a new Boeing 767 Civil Reserve Air Fleet Aeromedical Evacuation Shipset Simulator. A class of 33 flight-nurse and medical-technician students were the first to train in the new mock-up. (Photo by 1st Lt. Robert J. Krause)

New simulator upgrades medical training

hirty-three students from the Air Force School of Aerospace Medicine at Brooks City-Base, Texas, recently simulated caring for sick and injured patients aboard a Boeing 767 without ever leaving the ground.

In an effort to provide realistic hands-on training, school officials recently acquired a full-size 767 fuselage that has been configured as a patient-transport aircraft.

Officially known as the Civil Reserve Air Fleet Aeromedical Evacuation Shipset Simulator, the training device joins the C-130 Hercules and C-9 Nightingale mock-ups already at the school.

First class training

The first class of flight-nurse and medical-technician students trained on the mock-up Jan. 21.

With the recent announcement of the retirement of the C-9, it is becoming more likely that Air Force officials will call on civilian airlines in times of emergencies, said Col. Laura Alvarado, school commander.

The training device gives medics the ability to train on an aircraft they may have to use in the future.

"We have to be prepared to use any available platform," Col. Alvarado said.

The fuselage holds a working mock-up of an aircraft that only exists on paper: an aeromedical-evacuation version of the 767. The 767 currently flies only as a civilian airliner and cargo hauler.

From passenger to medical

In a medical configuration, the 767 can carry 111 litter-bound patients plus electric generators and oxygen tanks. The Civil Reserve Air Fleet contract with civilian airlines requires them to be able to convert a 767 into a medical configuration in 72 hours.

"I was really surprised by how detailed it is inside the mockup," said 1st Lt. Patrick Boyle, a flight nurse student. The mock-up allows the school to simulate a wide spectrum of scenarios, from disaster-relief operations through small-scale contingencies to major wars.

"Having this training device keeps us from having to learn on the fly, which improves the quality of care we can give," said Capt. Kari Dufour, a flight nurse instructor.

—1st Lt. Robert J. Krause, Air Force Print News

Korean AFIT student overcomes challenges

he has a history of seeking and overcoming challenges, most recently as the first female Korean soldier to study at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio.

A native of Kwang-Ju, Capt. Hee Hyoung Jung has been in the Army of South Korea almost nine years.

Beating the odds

Her interest in the military runs deep. While working toward her bachelor's degree in English literature from a Korean civilian university, Capt. Jung played Brutus in a production of Julius Caesar, a role that sparked her interest in being a soldier.

However, in Korea women make up only two percent of the military. Determined nonetheless, Capt. Jung was among a class of 46 chosen from more than 2,000 applicants and following six months of training, she was commissioned in 1994.

Promoted to captain in 1997, she participated in a six month infantry school to become a company commander. Her company was awarded first place in the shooting test, and she graduated first out of 160 students — including only four women.

Following that, she worked as a briefing officer in a demilitarized zone, and after a stint as a company commander at Army Headquarters and a personnel assignment officer, she decided to study in the United States to earn her master's degree.

An easy choice

Capt. Jung chose AFIT to show that she was an intelligent, well-informed soldier and to build a rapport with American sol-

Capt. Hee Hyong Jung is the first female Korean soldier to study at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. She is scheduled to graduate with honors in March 2003 from AFIT's School of Engineering and Management Department of Operational Sciences. diers, and says her time at AFIT has been incredibly rewarding, but also very difficult.

If not for the support of her classmates and instructors, she says, AFIT's challenging courses and the pressure to perform well for the Korean government might have been too much. But with that support and hard work she will graduate with honors in March 2003 from AFIT's School of Engineering and Management Department of Operational Sciences with a thesis on organizational changes between the United States and Korea.

She was even selected as a member of the Sigma Iota Epsilon honorary in her very first quarter for having a grade point average higher than 3.5 in logistics management.

Looking toward the future

Upon graduation, she will return to Korea and hopes to get a job in supply chain management or as a logistics field technician. But before she does that, she is taking the advice of previous Korean students who told her to enjoy America.

The events of Sept. 11, 2001, which happened after she had been at AFIT for just one week, put to rest any doubts she had about the United States. "I saw then why America is so popular," she said. "I was amazed by the patriotism of this land"

When not studying, she often plays the piano and watches quiz shows. She also likes the gym, where she and her teammates trained for the Air Force marathon. She sees running as a metaphor for teamwork, spirit, and incentive — everything embodied by a strong Korean soldier.

Loving the challenge

Capt. Jung hopes to eventually return to AFIT for her doctorate, though she says it is not likely right away because AFIT doesn't offer a doctorate in logistics management at this time.

"I need to prepare to take another exam for my doctorate, but I'll do it," she said. "I'll do whatever it takes because I want to come back very soon. I would love another challenge in America!"

— Ms. Kim Curry, AFIT Public Affairs



LEADING FORE MARCH 2003









Magoon farms: Growing tomorrow's leaders today

In an age when Americans have taken a step back to re-examine their values, one couple in the small community of Coble, Tenn., found a refreshing way to instill strong character and values in their children.

Lt. Col. Bruce Magoon, chief of the propulsion test division at Arnold Air Force Base, Tenn., calls himself the richest man in the world because of his family and the times they share. With quality family time, hard work and responsibilities, he and his wife, Diane, are teaching by example as they manage their 3,000-acre farm in the rolling hills of Hickman County.

Back to his roots

The colonel grew up on a small dairy farm near Erie, Penn., where everyone had a job to do and he realizes just how much of an impact that had on his life.

"It took all of us everyday to get the work done," he said. "I had chores before and after school. The hard work and responsibility that were a part of my upbringing are what have made my Air Force career so successful.

"Responsibility and character don't come about with magic dust you just sprinkle over your children," he continued. "It's something you have to build, and we want to help our children build that kind of character. It's the legacy I want to leave them."

Building a foundation

The values learned during childhood meshed perfectly with those he developed in the Air Force, building a solid foundation on which to raise his young family. He and his wife decided a farm-based upbringing with shared responsibilities was the best way to do that.

With 17 cats, two dogs, three registered quarter horses, six ducks and acres of grain and produce, the farm hums with activity. And, as in Col. Magoon's childhood, everyone has a job, even the family dog, Jessica.

"Jessica watches over the cats," said 9-year-old Katy.

On a Saturday morning when most kids would be watching cartoons the Magoon clan was already out doing chores. They don't watch television.

Photos (top to bottom) Candice (left) and Chris (center) raised 150 chickens as part of their 4-H project. The family takes turn cleaning the coop on Saturdays.

About 100 yards from high-tech grain bins on the farm is a 100-year-old cabin built by some of the first settlers in the area. Restoration is another family project.

Each year the Magoon assembly line builds new supers, like the one Mrs. Magoon is holding, for bees to build their honeycomb. Bees are essential to pollinating melon crops.

According to Candice Magoon, the chickens sing a little song when they are laying eggs. The family gets about seven dozen eggs a day. (Courtesy photos)

"It really came about as an accident," Col. Magoon laughingly explained. "After moving from one of my Air Force assignments, we just forgot to reconnect the TV. We were so busy during the day, and the time we spend together is so precious, we didn't miss it for about six months. Then, we just decided we didn't need it anyway."

Fifteen-year-old Curtis, 13-year-old Candice, and eleven-year-old Chris share the job of "cleaning house" at the chicken coop for their 150 chickens.

"When the hens are laying or have just finished laying, they sing a little song," Candice explained. "We have Rhode Island Reds and Black Bardrocks, and they usually lay about seven dozen eggs a day. We started out with 25 each as a 4-H project. When they were grown, we had to choose the six best to be judged at the county fair. We won first and second place."

Tasks are varied

But the chickens are only a small part of the enormous farm. Across the road from the chicken coop lies the newly planted two-acre strawberry patch.

In mid-September, using a special water wheel planter, Mrs. Magoon and the kids planted 11,000 strawberry plants of three

varieties. She also uses the planter for harvesting the berries, sorting as she picks. With an expected yield of 10,000 quarts of berries, it saves a lot of time and back strain, she said.

Although the strawberry plants come from a nursery, the 12,000 watermel-

on, cantaloupe and tomato plants grown in the greenhouse are another family project. Mrs. Magoon sets up a family assembly line to plant the seedlings in shifts of 4,000 plants.

"After I lay out the trays, a couple of the kids fill them with dirt, one of the younger ones comes through and pokes a hole for the seed and another drops the seed in place," she said. "Afterward, I do a quality check and cover them."

Despite the family's hard team efforts, they still rely on Mother Nature to ensure success.

"Watermelons and cantaloupes won't produce fruit unless they are pollinated by honeybees," Col. Magoon explained. "So we started raising bees to help with the melons. Diane also oversees the honey production."

Growing while learning

The Magoons use their cornfield, shaped like the state of Tennessee, to share their land and knowledge with the community. A cornfield maze has 10 stations, each containing three questions based on agriculture, the Bible or Tennessee history. The correct answer at a station reveals the next path.

At the center of the maze, an arched wooden bridge provides a view of the rolling fields and river below.

Local youth groups are treated to hayrides and bonfires after they complete the maze.

Just beyond the cornfield, old meets new as an 1818-era log cabin undergoes refurbishment. According to local history, the house was built by some of the first settlers allowed across the Duck River. Between its hand-hewn logs, the Magoons found newspapers dating from the years of Teddy Roosevelt's presidency.

About 100 yards away, shiny, modern grain bins with advanced drying systems house 100,000 bushels of field corn. Each year the farm yields 150,000 bushels of corn, 30,000 bushels of wheat and 30,000 bushels of soybeans in addition to three types of tomatoes, strawberries, watermelon and cantaloupes, and other garden produce.

The entire family helps with harvest and taking the produce to market.

It's not all about 'work'

Despite the hard work associated with the farm, the Magoon children also participate in extracurricular activities at school and enjoy hobbies such as violin, piano and guitar music, drawing and writing poetry.

The family is together

every morning, and every-

one helps get the day start-

"We get up at a quarter

til six and start the day with

meat and sometimes French

a full breakfast — eggs,

toast," Mrs. Magoon said.

bly line to make school

"Then we make our assem-

"Responsibility and character don't come about with magic dust you just sprinkle over your children. It's something you have to build, and we want to help our children build that kind of character. It's the legacy I want to leave them."

Lt. Col. Bruce Magoon

lunches and do our chores.

"Every morning Curtis makes sandwiches, including one for me since I substitute teach at the school. Then, someone else packs snacks and juice. Zack empties the dishwasher. Emily gets the breakfast dishes out; Katy feeds the pets and the kids take turns gathering and cleaning the eggs. By 7 a.m., we're out the door."

The old fashioned way

Sounds like a lot of hard work, and it is. But, just a few hours spent with this family makes one envious of the love and closeness they share.

They spend their spare time using their imaginations to create Leggo towns, learning to play musical instruments, drawing, writing poems, riding horses, and just being kids — the old-fashioned way instead of the electronic way. Instead of memories of Nintendo games and TV shows, they will remember the special bond built by working and playing side-by-side.

Col. Magoon summarized it best, "We're not growing crops, we're growing tomorrow's future leaders."

— Ms. Tina Barton, AEDC Public Affairs

Brooks golfer survives cancer

The miracle of life is inherently associated with birth. To a Brooks City-Base, Texas, cancer survivor, there's renewed life in near-death.

ou're either touched or blessed by the good Lord," said Staff Sgt. James

Franklin Barfield in a gentle, pleasing tone. His face reveals no signs of stress or any residue of pain. His tranquil demeanor belies the fact that just eight months ago he appeared to have lost his fight with lung cancer.

When Sgt. Barfield completed the third round at the Air Force Materiel Command golf tournament at Robins Air Force Base, Ga., in September 2002, no one other than his fellow Brooks varsity golf team members knew that, for him, playing there was a personal victory. "For me, it was part of my rehabilitation," he said almost reverently about his first competitive round on the links.

Winning the fight

However, eight months earlier there were no thoughts about playing golf or doing anything else but breathe when Sgt. Barfield was wheeled into the operating room at Wilford Hall Medical Center at Lackland AFB, Texas. He would spend his 41st birthday unconscious and in critical condition.

"My blood pressure dropped to nothing," he said, describing his post-surgery condition after doctors removed his left

Losing a lung to cancer has slowed but not stopped Staff Sgt. James Barfield, who eight months after nearly succumbing to the fatal disease played in the 2002 Air Force Materiel Command golf tournament. (Photo by Mr. Rudy Purificato, 311th HSW Public Affairs.)

lung containing a quarter-sized carcinoid tumor. He was on life support for four days with a breathing tube in his remaining lung. Fortunately, the cancer had not spread, and eight days later he was discharged from the hospital.

Fate plays a role

If it were not for a lunchtime accident at the fitness center during a racquetball game, Sgt. Barfield would not be alive today. Just after Thanksgiving, he crashed into the wall hitting his left side. A chest X-ray to determine if he had broken ribs detected a tumor in his lung. A biopsy verified the tumor was cancerous.

While Sgt. Barfield had been a smoker, the rare tumor he had is not associated with smoking.

"The tumor had been there since 2000. It was in the same location where I had been earlier diagnosed with pneumonia," he explained. Pneumonia produces tissue "streaking" where part of the lung hardens. Sgt. Barfield speculates that perhaps the streaking may have masked detection of the tumor.

He turned to his Roman Catholic faith for comfort and guidance. His parish priest at San Fernando Cathedral advised him about the power of prayer. That prayer and his will to live prevailed, he said. The ordeal has profoundly changed his outlook on life.

As for his favorite pastime, Sgt. Barfield said, "I look at playing golf now as the ice cream and cookies of life."

When he first left the hospital 36 pounds lighter, Sgt. Barfield believed that competitive golf was not in his near future. He became bored during his recovery period in which his weight ballooned to 174 pounds, despite a three to five day workout regimen that included light weight training and sprints. By mid-April he began swinging the clubs again. "I knew I'd be able to play golf someday. Golf was an extra motivator in my recovery."

Making the team

He admits being surprised he made the Brooks varsity team because of his lack of physical endurance.

While he becomes fatigued more easily, Sgt. Barfield adapted to tournament play's physical demands. He doesn't plan to retire from a game he has loved since age 14. What he does plan to do is encourage others

"Don't give up on yourself, family, friends or prayer," he said.

— Mr. Rudy Purificato, 311th HSW Public Affairs



AFFTC employee wins BEYA special recognition

EDWARDS AIR FORCE BASE, Calif.

— An electronics engineer with the Global Hawk Unmanned Aerial Vehicle flight test program here was recently selected for a national award for his contributions in engineering and science.

Mr. Rodgerick Newhouse, an electronics engineer with 452nd Flight Test

Squadron at Edwards, was chosen as the most promising engineer in government for 2003 by the Black Engineer of the Year Awards selection panel and notified by Gen. Lester Lyles, Air Force Materiel Command commander, during the AFMC fall 2002 commander's conference held at Edwards.

-- Reported by AFFTC Public Affairs



Mr. Rodgerick Newhouse, Edwards AFB, Calif., won national award as the most promising engineer in government. (AFFTC photo)

GATO/MC2 recognized for 'world-class' performance

HANSCOM AIR FORCE BASE, Mass.

— The Global Air Traffic Operations and Mobility Command and Control System Program Office at Electronic Systems Center here won runner-up in the Program Executive Office category of this years' Gen. Bernard A. Schriever Award.

Based on criteria including excellent leadership and customer focus, the award is presented annually to the Air Force's best system program offices. This year's PEO category winner was the F-15 System Program Office, Wright-Patterson AFB, Ohio.

A PEO program is one where the director reports to a program executive in the Pentagon rather than to a designated acquisition commander at a product center. There are approximately 40 major PEO programs in contention for the award annually. Some of the programs accomplishments include:

- Risk reduction efforts in the Global Air Traffic Management avionics testbed discovered and led the effort to fix a critical Presidential VC-25 aircraft software deficiency.
- Providing a cost analysis on the Defense Department's impact to new civil communication requirements and convincing the FAA to integrate common requirements for a communication link to display air traffic in a safe "free flight" environment. This is expected to save more than \$13 billion over time.
- The Air Traffic Control and Landing Systems Sustainment manager reduced the mission impaired capability awaiting parts rate for fielded systems by 67 per-

cent and backordered items by 65 percent.

— Leveraged C2 Enterprise efforts to

- satisfy requirements.

 Hosted "Wednesday School,"
 including in-house classes covering technical, leadership and acquisition topics
 and opened the classes to all of Electronic
- nical, leadership and acquisition topics and opened the classes to all of Electronic Systems Center on the first Fridays of each month. Also held mandatory monthly mentoring session for each of the 41 company grade officers in the program office.
- Reported by ESC Public Affairs

AFRL/SN senior scientists named as IEEE fellows

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Two Air Force Research Laboratory Sensors Directorate senior scientists were distinguished recently by The Electrical and Electronic Engineers as 2003 Fellows.

Receiving one of the most prestigious honors granted by the IEEE, Dr. Brian Kent, principal technical research leader, Wright-Patterson, and Dr. Richard Soref, research scientist, Hanscom AFB, Mass., join a select group of electrical and electronic accomplished engineers.

Dr. Kent serves as the internationally recognized expert on "Low Observable" Radar Cross Section Test and Evaluation technologies. Dr. Soref invented and developed a new family of Silicon-based photonic and optoelectronic components for chip-scale and wafer-scale integration with Silicon and Silicon-Germanium electronics.

The IEEE is a global technical professional society serving the public interest and members in electrical, electronics,

computer, information and other technologies.

- Reported by AFRL Public Affairs

AFRL engineer receives national recognition

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — An Air Force Research Laboratory Materials and Manufacturing Directorate employee was awarded the 2003 Black Engineer of The Year Award at the 17th Annual Black Engineer of the Year Awards Conference held in February in Baltimore.

Dr. Edmund Moore, a basic research program manager and scientist, received the award in the special recognition category for his professional achievements and personal commitment to helping others succeed.

Dr. Moore's career accomplishments and leadership provide long-term contributions to the placement of blacks, women and other minorities in scientific research and development areas.

In November 2000, he implemented a program to increase the quantity of technical work performed by the Historically Black Colleges and Universities collaboration program, while increasing the number of blacks and other minority scientists in the directorate.

The program seeks to identify, characterize and select the most compatible HBCUs with materials and manufacturing research and development capabilities to conduct mutually beneficial research and development efforts.

The program he developed has become known as the "AFRL/ML HBCU Collaboration Model."

— Reported by AFRL Public Affairs